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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,992	02/18/2004	Katsutoshi Suzuki	9281-4768	3310

7590 07/20/2006

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Chicago, IL 60610

EXAMINER
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LUKS, JEREMY AUSTIN

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/780,992		SUZUKI, KATSUTOSHI	
	<b>Examiner</b>		<b>Art Unit</b>	
	Jeremy Luks		2837	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/18/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai (WO 01/41496).

With respect to Claim 1, Sakai teaches a plane diaphragm (Figure 3B, #9) and a vibration-generating driving source (2, 3) for vibrating the diaphragm (9), wherein the vibration-generating driving source (2, 3) is supported on the back side of the diaphragm (9) near one end of the diaphragm (9), at least the one end and the two sides perpendicular to the one end and opposite to each other are supported on an elastic cushion member (6b), the cushion member (6b) is supported on a base (12), with one side of the base (12) supporting the diaphragm (9) and the other side of the base (12) arranged at a side opposite to the diaphragm (9), and a vibration controlling portion for controlling a particular vibration mode having a large amplitude generated in the diaphragm (9) is formed in the cushion member (6b) or the base (12), and wherein the diaphragm (9) vibrates in a plane direction perpendicular to the plane of the diaphragm (9) when the vibration-generating driving source (2, 3) is driven.

With respect to Claim 6, Sakai teaches wherein the vibration-generating source includes a magnet (Figure 3B, #2) arranged with a predetermined gap between the

magnet (2) and the back side of the diaphragm (9), and a coil (10) wound with a predetermined gap between the coil (10) and the outer peripheral surface of the magnet (2), the coil being fixed to the back side of the diaphragm (9), the magnet (2) being mounted on a first plate-shaped yoke (1), and wherein the first yoke (1) is supported on a connecting member (5) fixed to the back side of the diaphragm (9) and a gap is formed between the first yoke (1) and the base (12).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (WO 01/41496) in view of Shimakawa (5,894,263). Sakai is relied upon for the reasons and disclosures set forth above. Sakai further teaches a cushion member (Figure 3B, #6b) supporting two opposite sides of the diaphragm (9). Sakai fails to teach wherein the vibration controlling portion is formed by partly varying the width dimension of the cushion member by partly projecting or concaving the portion of the cushion member, and the elastic force of the cushion member supporting the diaphragm is partly varied by the vibration controlling portion. Shimakawa teaches a vibration-controlling portion formed by partly varying the width dimension of the cushion member (Figure 12, #21e-f) by partly projecting a portion (21e) of the cushion member (21e-f), and an elastic force of the cushion member (21e-f) is partly varied by the vibration-

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controlling portion. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Sakai, with the apparatus of Shimakawa to provide a flat spectrum of frequency vibrations.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (WO 01/41496) in view of Sahyoun (6,460,651). Sakai is relied upon for the reasons and disclosures set forth above. Sakai fails to teach holes formed in a portion of the cushion member, and the elastic force of the cushion member supporting the diaphragm is partly varied by the holes. Sahyoun teaches holes (Figure 33, #276) formed in a portion of a cushion member, and the elastic force of the cushion member supporting the diaphragm is partly varied by the holes (276) when used in combination with Sakai. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Sakai as modified, with the apparatus of Sayhoun in order to provide a flat spectrum of frequency vibrations.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (WO 01/41496) in view of Bertagni (5,693,917). Sakai is relied upon for the reasons and disclosures set forth above. Sakai further teaches a vibration-controlling portion comprises a cushion member (Figure 3B, #6b) supporting two opposite sides of the diaphragm (9). Sakai fails to teach wherein a stepped portion formed in the portion of the base supporting the other side of the cushion member, and the elastic force of the cushion member supporting the diaphragm is partly varied by the stepped portion. Bertagni teaches a stepped portion (Figure 5, #78) formed in a portion of a base (74) supporting the other side of a cushion member when used in combination with Sakai,

and the elastic force of the cushion member supporting the diaphragm is partly varied by the stepped portion (78), when used in combination with Sakai. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Sakai as modified, with the apparatus of Bertagni to better secure the apparatus together.

### ***Conclusion***

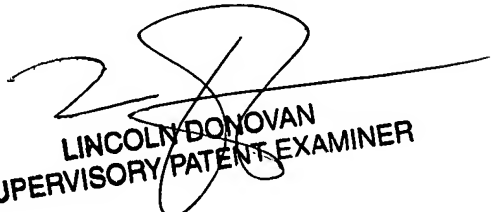
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to electro-acoustic transducers are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy Luks  
Patent Examiner  
Art Unit 2837



LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER